

KPDES FORM 1

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

2004 APR -1 P 1:01

PERMIT APPLICATION

DIVISION OF WATER

CK 200

This is an application to: (check one)

- ☐ Apply for a new permit.
☒ Apply for reissuance of expiring permit.
☐ Apply for a construction permit.
☐ Modify an existing permit.

Give reason for modification under Item II.A.

A complete application consists of this form and one of the following:

Form A, Form B, Form C, Form F, or Short Form C

For additional information contact:

KPDES Branch (502) 564-3410

I. FACILITY LOCATION AND CONTACT INFORMATION

AGENCY
USE

A. Name of business, municipality, company, etc. requesting permit
General Motors Corporation

B. Facility Name and Location

Facility Location Name:

General Motors - Bowling Green Assembly

Facility Location Address (i.e. street, road, etc.):

600 Corvette Drive

Facility Location City, State, Zip Code:

Bowling Green, KY 42102

C. Facility Owner/Mailing Address

Owner Name:

General Motors Corporation

Mailing Street:

600 Corvette Drive

Mailing City, State, Zip Code:

Bowling Green, KY 42102

Telephone Number:
270-745-8230

II. FACILITY DESCRIPTION

A. Provide a brief description of activities, products, etc: Automotive assembly plant - The major production operations include mig and spot welding, paint and general assembly. The facility has support operations including a wastewater treatment plant and a powerhouse that supplies the facility with utilities.
The stormwater system receives stormwater run-off from the property, condensate water (non-contact cooling water) from air conditioning units on the roof of the building ,and water from drinking fountains.

B. Standard Industrial Classification (SIC) Code and Description

Principal SIC Code &
Description:

3711 - Motor Vehicles and Passenger Car Bodies

Other SIC Codes:

III. FACILITY LOCATION

A. Attach a U.S. Geological Survey 7 1/2 minute quadrangle map for the site. (See instructions)

B. County where facility is located:
Warren

City where facility is located (if applicable):
Bowling Green

C. Body of water receiving discharge:
On-site sink holes

D. Facility Site Latitude (degrees, minutes, seconds):
86 degrees, 21 minutes, 55 seconds

Facility Site Longitude (degrees, minutes, seconds):
37 degrees, 00 minutes, 35 seconds

E. Method used to obtain latitude & longitude (see instructions): Topo map coordinates

F. Facility Dun and Bradstreet Number (DUNS #) (if applicable): 099769952



General Motors

Bowling Green Plant

CERTIFIED MAIL
Return Receipt Requested

March 15, 2004

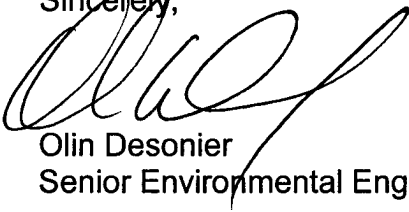
Mr. Doug Allgeier, KPDES Permit Writer
Division of Water, KPDES Branch
Department of Environmental Protection
14 Reilly Road
Frankfort, KY 40601

Dear Mr. Allgeier,

Enclosed please find the renewal application for General Motors - Bowling Green Assembly's Kentucky Pollution Discharge Elimination System (KPDES) stormwater discharge permit - KPDES Permit No. KY0079545. Included with KPDES Forms 1 and F, and the required attachments is check no. 002651683 in the amount of \$200 to cover the application filing fee.

If you have any questions or require further information, please contact me at 270-745-8230.

Sincerely,



Olin Desonier
Senior Environmental Engineer

enc

IV. OWNER/OPERATOR INFORMATION	
A. Type of Ownership: <input type="checkbox"/> Publicly Owned <input checked="" type="checkbox"/> Privately Owned <input type="checkbox"/> State Owned <input type="checkbox"/> Both Public and Private Owned <input type="checkbox"/> Federally owned	
B. Operator Contact Information (See instructions)	
Name of Treatment Plant Operator:	Telephone Number:
Operator Mailing Address (Street):	
Operator Mailing Address (City, State, Zip Code):	
Is the operator also the owner? Yes <input type="checkbox"/> No <input type="checkbox"/>	Is the operator certified? If yes, list certification class and number below. Yes <input type="checkbox"/> No <input type="checkbox"/>
Certification Class:	Certification Number:

V. EXISTING ENVIRONMENTAL PERMITS		
Current NPDES Number: KY0079545	Issue Date of Current Permit: 10/01/2001	Expiration Date of Current Permit: 8/31/2004
Number of Times Permit Reissued:	Date of Original Permit Issuance:	Sludge Disposal Permit Number: N/A
Kentucky DOW Operational Permit #: N/A	Kentucky DSMRE Permit Number(s): N/A	

C. Which of the following additional environmental permit/registration categories will also apply to this facility?

CATEGORY	EXISTING PERMIT WITH NO.	PERMIT NEEDED WITH PLANNED APPLICATION DATE
Air Emission Source	Air Quality Permits F-97-022, O-85-02	
Solid or Special Waste	N/A	
Hazardous Waste - Registration or Permit	KYD000622993	

VI. DISCHARGE MONITORING REPORTS (DMRs)
--

KPDES permit holders are required to submit DMRs to the Division of Water on a regular schedule (as defined by the KPDES permit). The information in this section serves to specifically identify the department, office or individual you designate as responsible for submitting DMR forms to the Division of Water.

A. Name of department, office or official submitting DMRs:	Environmental Engineering
B. Address where DMR forms are to be sent. (Complete only if address is different from mailing address in Section I.)	
DMR Mailing Name:	General Motors - Bowling Green Assembly
DMR Mailing Street:	600 Corvette Drive
DMR Mailing City, State, Zip Code:	Bowling Green, KY 42102
DMR Official Telephone Number:	270-745-8230

VII. APPLICATION FILING FEE

KPDES regulations require that a permit applicant pay an application filing fee equal to twenty percent of the permit base fee. Please examine the base and filing fees listed below and in the Form 1 instructions and enclose a check payable to "Kentucky State Treasurer" for the appropriate amount. Descriptions of the base fee amounts are given in the "General Instructions."

Facility Fee Category:

Non-Process Industry

Filing Fee Enclosed:

\$200

VIII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

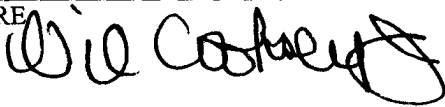
NAME AND OFFICIAL TITLE (type or print):

Wil Cooksey, Jr. - Plant Manager

TELEPHONE NUMBER (area code and number):

270-745-8200

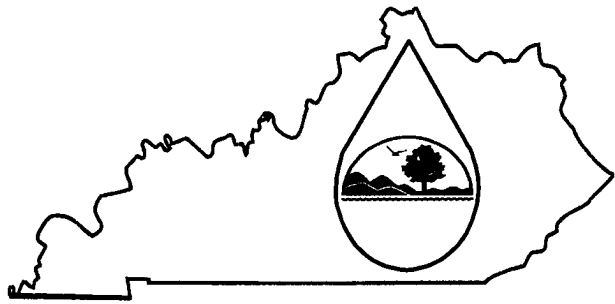
SIGNATURE



DATE:

3.29.04

KPDES FORM F



KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT APPLICATION

A complete application consists of this form and Form 1. For additional information, Contact KPDES Branch, (502) 564-3410.

AGENCY USE

I. OUTFALL LOCATION

For each outfall list the latitude and longitude of its location to the nearest 15 seconds and name the receiving water.

A. Outfall Number	B. Latitude			C. Longitude			D. Receiving Water (name)
001	86	21'	40"	37	00'	30"	Sink Hole
002	86	22'	02"	37	00'	25"	Sink Hole
003	86	21'	45"	37	00'	45"	Sink Hole
004	86	21'	58"	37	00'	50"	Sink Hole

II. IMPROVEMENTS

A. Are you now required by any federal, state, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	No.	Source of Discharge		a. req.	b. proj.
N/A					

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

III. SITE DRAINAGE MAP

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfall(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive storm water discharges from the facility.

IV. NARRATIVE DESCRIPTION OF POLLUTANT SOURCES					
A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.					
Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
001	360,000 sq. feet	1,720,000 sq. feet			
002	582,000 sq. feet	912,000 sq. feet			
003	90,000 sq. feet	420,000 sq. feet			
004	500,000 sq. feet	2,400,000 sq. feet			

- B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

All chemical processes are performed inside buildings. Most chemicals are stored and used inside the buildings other than the bulk fluids that are stored in the bulk fluids tank farm. The fluids are stored in steel tanks that are in a diked concrete containment area. Materials for use in the plant are unloaded by backing trucks up to unloading docks located in the side of the building and materials are unloaded directly into the building. The facility has a waste 90-day accumulation pad that is covered and has a diked concrete pad. Scrap and trash gondolas, virgin steel (angle iron, I beams, channel iron, etc.) for building projects, scrap metal for recycling, empty material storage racks, automobile body truck parts, paint test bodies, and vehicles are stored outside. None of these items represent a significant risk for stormwater contamination.

The facility has a Stormwater Pollution Prevention Plan, Spill Prevention and Countermeasure Plan, Emergency Response Plan, and a Hazardous Waste Management Facility Contingency Plan. The purpose of these plans is to prevent and mitigate the spills and contamination. The facility also has a Hazardous Material Control Committee that evaluates all chemical materials for health and safety effects, environmental impact, disposal and safe use and storage. Security personnel make routine rounds of the facility during off-shifts, weekends, and holidays to check for spills or leaks. Security personnel are trained in spill response.

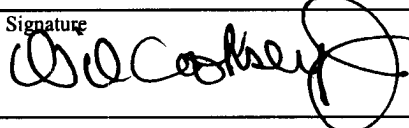
Fertilizers and herbicides are periodically applied to the facility grounds by Chem Lawn of Bowling Green.

- C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table F-1
	See Attachment	

V. NON-STORM WATER DISCHARGES

- A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-storm water discharges, and that all non-storm water discharges from these outfall(s) are identified in either an accompanying Form C or Form SC application for the outfall.

Name and Official Title (type or print)	Signature	Date Signed
Wil Cooksey, Jr., Plant Manger		3.29.04

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

All samples taken from the four stormwater retention ponds were sampled by Ensafé, Inc. and witnessed by GM personnel. The samples are taken as grabs from the retention ponds at the discharge point prior to mixing with the receiving waters. The samples are then packaged by Ensafé and sent to Environmental Science Corp., where they are analyzed for the required parameters.

VI. SIGNIFICANT LEAKS OR SPILLS

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

There have been no significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years.

VII. DISCHARGE INFORMATION

A,B,C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided. Tables F-1, F-2, and F-3 are included on separate pages.

E: Potential discharges not covered by analysis - is any toxic pollutant listed in Table F-2, F-3, or F-4, a substance which you currently use or manufacture as an intermediate or final product or by product.

☐ Yes (list all such pollutants below)

☒ No (go to Section IX)

VIII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes (list all such results below)

☒ No (go to Section IX)

IX. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in item VII performed by a contract laboratory or consulting firm?

☒ Yes (list the name, address and telephone number of, and pollutants analyzed by each such laboratory or firm below; use additional sheets if necessary).

☐ No (go to Section IX)

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
Environmental Science Corp.	12065 Lebanon Road Mt. Juliet, TN 37122	615-758-5858	Oil & Grease - Ponds 1, 2,3,4 Hardness - Ponds 1, 2, 3 TSS - Ponds 1,2,3,4 PH -Ponds 1,2,3,4 Copper - Ponds 1,2,3 Lead - Ponds 1, 2,3 Zinc - Ponds 1,2,3 Benzene - Pond 4 Toluene- Pond 4 TOC - Pond 4

X. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. This certification is made on behalf of the General Motors Corporation.

NAME & OFFICIAL TITLE (type or print)

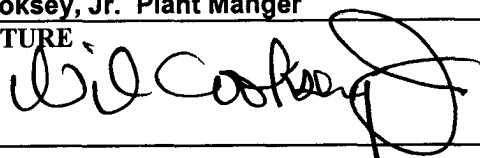
AREA CODE AND PHONE NO.

Wil Cooksey, Jr. Plant Manager

270-745-8200

SIGNATURE

DATE SIGNED



3.29.04

OUTFALL NO: 001

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite		

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's KPDES permit for its process wastewater (if the facility is operating under an existing KPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements. **Sample collected on 3/5/04 – Analytical attached.**

	Maximum Values	Average Values		
--	----------------	----------------	--	--

[illegible]

Part C - List each pollutant shown in Tables F-2, F-3, and F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow-weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gal/min or specify units)	6. Total flow from rain event (gallons or specify units)
Not applicable since samples are from the retention pond.					

7. Provide a description of the method of flow measurement or estimate.

OUTFALL NO: 002

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite		
Oil and Grease	<1.0 ppm	N/A				
Biological Oxygen Demand BOD ₅	<5.0 ppm					
Chemical Oxygen Demand (COD)	<20 ppm					
Total Suspended Solids (TSS)	5.8 ppm					
Total Kjeldahl Nitrogen	1.1 ppm					
Nitrate plus Nitrite Nitrogen	0.45 ppm					
Total Phosphorus	<0.10					
pH	Minimum	Maximum	Minimum	Maximum		

[illegible]

Part C - List each pollutant shown in Tables F-2, F-3, and F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow-weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gal/min or specify units)	6. Total flow from rain event (gallons or specify units)
Not applicable since samples are from the retention pond.					

7. Provide a description of the method of flow measurement or estimate.

OUTFALL NO: 003

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite		
Oil and Grease	2.6 ppm	N/A				
Biological Oxygen Demand BOD ₅	<5.0 ppm					
Chemical Oxygen Demand (COD)	<20.0 ppm					
Total Suspended Solids (TSS)	12.0 ppm					
Total Kjeldahl Nitrogen	1.4 ppm					
Nitrate plus Nitrite Nitrogen	0.28 ppm					
Total Phosphorus	<0.10 ppm					
pH	Minimum	Maximum	Minimum	Maximum		

[illegible]

Part C - List each pollutant shown in Tables F-2, F-3, and F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow-weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gal/min or specify units)	6. Total flow from rain event (gallons or specify units)
Not applicable since samples are from the retention pond.					

7. Provide a description of the method of flow measurement or estimate.

OUTFALL NO: 004

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's KPDES permit for its process wastewater (if the facility is operating under an existing KPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements. **Sample collected on 3/5/04 - Analytical attached.**

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite	Grab Sample Taken During 1 st 20 Minutes	Flow-weighted Composite		

Part C - List each pollutant shown in Tables F-2, F-3, and F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow-weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gal/min or specify units)	6. Total flow from rain event (gallons or specify units)
Not applicable since samples are from the retention pond.					

7. Provide a description of the method of flow measurement or estimate.

Form F
Section IV
Item C

Information common to all four outfalls:

The facility has implemented the following plans, which address various management controls that are in place, which minimize contamination of stormwater from the facility:

- Spill Prevention Control and Countermeasures Plan
- Emergency Response Plan
- Hazardous Waste Management Facility Contingency Plan
- Groundwater Protection Plan

Plant Security personnel make rounds of the facility at a minimum twice per shift and up to eight times per shift during off shifts, weekends, and downtimes. The security personnel are trained in Hazard Communications (29 CFR 1910.1200), and are trained at the Awareness Level for HAZWOPER (29 CFR 1910.120). All chemical processes such as welding, painting, phosphating, sealer and adhesive operations, fluid fill operations (engine oil, transmission fluid, antifreeze, rear axle fluid, brake fluid, power steering fluid, windshield washer fluid, and unleaded gasoline) are conducted inside the building, thus there is no opportunity for any stormwater contamination from these operations. All non-bulk chemicals are unloaded and stored inside the building. Bulk chemical materials are unloaded in contained areas and stored in the process fluids tank farm area, which is diked, contained, and concreted.

Outfalls 1, 2, and 3

The treatment of the stormwater that is discharged at the three outfalls consists of settling (1-U) in the retention ponds. Outfalls 1,2,3 are concrete lined retention ponds with the discharge valves that normally remain closed. The retention ponds are visual inspected and samples are collected before the stormwater is discharged by opening the discharge valve. After the discharge is complete the valve is closed. If by the visual inspection the stormwater is questionable the pond will not be discharged until the analytical results confirm that all discharge limitations have been met.

Outfall 4

Outfall 4 receives water from the containment area for the process fluids tank farm. This containment area has a valve on the discharge, which remains normally closed. The water in the containment area is visually inspected and samples are collected before the stormwater is discharged by opening the discharge valve. After the discharge is complete the valve is closed. If by the visual inspection the stormwater is questionable the containment area will not be discharged until the analytical results confirm that all discharge limitations have been met.



ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

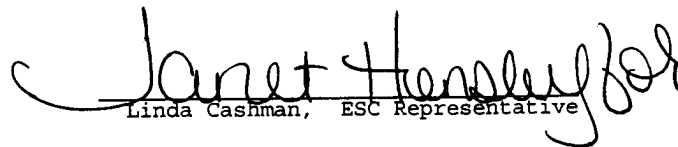
Date Received : March 05, 2004
Description : Storm Ponds
Sample ID : POND 001 24 IN
Collected By : Beth May
Collection Date : 03/05/04 12:55

ESC Sample # : L146672-01

Site ID : CORVETTE PLANT

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
BOD	BDL	5.0	mg/l	SM5210B	03/06/04	1
COD	BDL	20.	mg/l	410.4	03/08/04	1
Nitrate-Nitrite	0.30	0.10	mg/l	353.2	03/11/04	1
Phosphorus, Total	BDL	0.10	mg/l	365.2	03/10/04	1
Kjeldahl Nitrogen, TKN	1.0	0.50	mg/l	351.2	03/11/04	1


Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 03/12/04 12:43 Printed: 03/12/04 12:44



ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

ESC Sample # : L146672-02

Date Received : March 05, 2004
Description : Storm Ponds

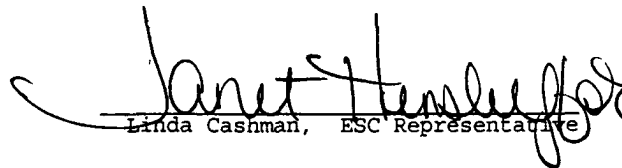
Site ID : CORVETTE PLANT

Sample ID : POND 002 8 IN

Project # :

Collected By : Beth May
Collection Date : 03/05/04 12:42

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
BOD	BDL	5.0	mg/l	SM5210B	03/06/04	1
COD	BDL	20.	mg/l	410.4	03/08/04	1
Nitrate-Nitrite	0.45	0.10	mg/l	353.2	03/11/04	1
Phosphorus, Total	BDL	0.10	mg/l	365.2	03/10/04	1
Kjeldahl Nitrogen, TKN	1.1	0.50	mg/l	351.2	03/11/04	1


Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 03/12/04 12:43 Printed: 03/12/04 12:44



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SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

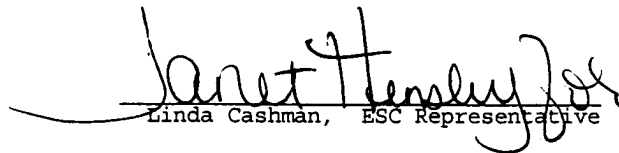
ESC Sample # : L146672-03

Site ID : CORVETTE PLANT

Project # :

Date Received : March 05, 2004
Description : Storm Ponds
Sample ID : POND 003 11 IN
Collected By : Beth May
Collection Date : 03/05/04 13:12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
BOD	BDL	5.0	mg/l	SM5210B	03/06/04	1
COD	BDL	20.	mg/l	410.4	03/08/04	1
Nitrate-Nitrite	0.28	0.10	mg/l	353.2	03/11/04	1
Phosphorus, Total	BDL	0.10	mg/l	365.2	03/10/04	1
Kjeldahl Nitrogen, TKN	1.4	0.50	mg/l	351.2	03/11/04	1


Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

Date Received : March 05, 2004
Description : Storm Ponds

Sample ID : POND 004 2 IN/1IN

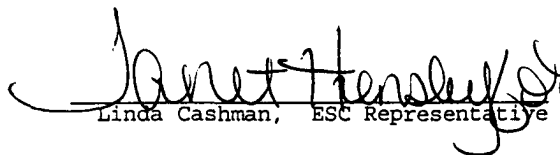
Collected By : Beth May
Collection Date : 03/05/04 13:30

ESC Sample # : L146672-04

Site ID : CORVETTE PLANT

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
BOD	BDL	5.0	mg/l	SM5210B	03/06/04	1
COD	BDL	20.	mg/l	410.4	03/08/04	1
Nitrate-Nitrite	0.53	0.10	mg/l	353.2	03/11/04	1
Phosphorus, Total	BDL	0.10	mg/l	365.2	03/10/04	1
Kjeldahl Nitrogen, TKN	1.3	0.50	mg/l	351.2	03/11/04	1


Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L146672-01	BOD	B1J4
L146672-02	BOD	B1J4
L146672-03	BOD	B1J4
L146672-04	BOD	B1J4



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Quality Assurance Report Level II

L146672

March 12, 2004

Analyte	Result	Laboratory Blank Units	Date Analyzed	Batch
BOD	0.410	mg/l	03/06/04 12:00	WG147416
BOD	0.820	mg/l	03/06/04 12:00	WG147416
COD	< 20	mg/l	03/08/04 09:00	WG147595
Phosphorus, Total	< .1	mg/l	03/10/04 15:31	WG147638
Kjeldahl Nitrogen, TKN	< .5	mg/l	03/11/04 17:08	WG147931
Nitrate-Nitrite	< .1	mg/l	03/11/04 11:27	WG148035

Analyte	Units	Duplicate Result Duplicate	RPD	Limit	Ref Samp	Batch
BOD	mg/l	293. 300.	2.36	10	L146678-04	WG147416
Phosphorus, Total	mg/l	6.05 6.00	0.906	20	L146448-01	WG147638
Kjeldahl Nitrogen, TKN	mg/l	14.7 14.0	4.90	20	L146562-01	WG147931
Nitrate-Nitrite	mg/l	0.376 0.380	0.944	20	L146669-01	WG148035

Analyte	Units	Laboratory Control Sample Known Val Result	% Rec	Limit	Batch
BOD	mg/l	198 234.	118.	85-115	WG147416
BOD	mg/l	198 222.	112.	85-115	WG147416
COD	mg/l	392.3 420.	107.	85-115	WG147595
COD	mg/l	392.3 420.	107.	85-115	WG147595
Phosphorus, Total	mg/l	1 1.04	104.	85-115	WG147638
Kjeldahl Nitrogen, TKN	mg/l	5.09 5.48	108.	85-115	WG147931
Nitrate-Nitrite	mg/l	5 4.85	97.0	85-115	WG148035

Analyte	Units	Laboratory Control Sample Duplicate LCSD Res Ref Res	RPD	Limit	Ref Samp	Batch
COD	mg/l	400. 420.	4.88	20	WG147595-2	WG147595
COD	mg/l	400. 420.	4.88	20	WG147595-2	WG147595

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
COD	mg/l	390.	0.00	400	97.5	80-120	L146669-01	WG147595
COD	mg/l	390.	0.00	400	97.5	80-120	L146669-01	WG147595
Phosphorus, Total	mg/l	2.67	0.370	2.5	92.0	80-120	L146669-02	WG147638
Kjeldahl Nitrogen, TKN	mg/l	11.5	1.10	10	104.	80-120	L145827-01	WG147931
Nitrate-Nitrite	mg/l	10.1	0.130	10	99.6	80-120	L146848-03	WG148035

Analyte	Units	Matrix Spike Duplicate MSD Res Ref Res	RPD	Limit	% Rec	Ref Samp	Batch
COD	mg/l	380. 390.	2.60	20	95.0	L146669-01	WG147595
COD	mg/l	380. 390.	2.60	20	95.0	L146669-01	WG147595



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Level II

Bowling Green, KY 42102-9006

L146672

March 12, 2004

Analyte	Matrix Spike Duplicate			RPD	Limit	%Rec	Ref Samp	Batch
	Units	MSD Res	Ref Res					
Phosphorus, Total	mg/l	2.59	2.67	3.19	20	88.7	L146669-02	WG147638
Kjeldahl Nitrogen, TKN	mg/l	12.0	11.5	3.63	20	109.	L145827-01	WG147931
Nitrate-Nitrite	mg/l	10.0	10.1	0.530	20	99.0	L146848-03	WG148035

Batch number / Run number / Sample number cross reference

WG147595: R189221: L146672-01 02 03 04
WG147638: R189425: L146672-01 02 03 04
WG148035: R189487: L146672-01 02 03 04
WG147931: R189564: L146672-01 02 03 04
WG147416: R189628: L146672-01 02 03 04

- * See Attachment B of standard report for list of qualifiers.
- * Calculations are performed prior to rounding of reported values .



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Quality Assurance Report
Level II

Bowling Green, KY 42102-9006

L146672

March 12, 2004

ESC Level 2 Data Package

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

General Motors, Bowling Green

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Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page ____ of ____

Report to:

Mr. Olin Desonier

Email:

olin.h.desonier@gm.com

Project Description: Storm Ponds

City/State Collected

86, KY

Phone: (270) 745-8230
FAX: (270) 745-8159

Lab Project #

WMIBG-STORMPONDS

Collected by (print):

Beth May

Site/Facility ID#:

CORVETTE PLANT

P.O.#:

Collected by (signature):

Beth May

Rush? (Lab MUST Be Notified)

Same Day 200%
Next Day 100%
Two Day 50%

Date Results Needed

Email? No ☒ Yes
FAX? No ☐ Yes

Packed on Ice N

Y

Sample ID

Comp/Grab

Matrix*

Depth

Date

Time

No. of Cnts

BOD 1L-HDPE-NoPres

COD, NO2NO3, PT, TKN 500mlHDPE-Add H2SO4

Remarks/Contaminant

Sample # (lab only)

CoCode: WMIBG

(lab use only)

Template/Prelogin T23368 P105463

Cooler #:

Shipped Via:

FedEx Ground



Prepared by:

12065 Lebanon Road
Mt. Juliet, TN 37122

Phone (800) 767-5859

FAX (615) 758-5859

*Matrix: SS - Soil GW - Groundwater WW - Wastewater DW - Drinking Water OT - Other

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Relinquished by: (Signature) <i>Beth May</i>	Date: 8/5/04	Time: 15:30	Received by: (Signature) <i>Beth May</i>	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition:	(lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Bottles Received:	pH Checked:	NCF:
Relinquished by: (Signature)	Date: 8/5/04	Time: 17:20	Received for lab by: (Signature) <i>Beth May</i>	Date: 8-5-04	Time: 17:20	pH Checked: 2.2



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REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

ESC Sample # : L146673-01

Date Received : March 05, 2004
Description : Storm Ponds

Site ID : CORVETTE PLANT

Sample ID : POND 001 24 IN

Project # :

Collected By : Beth May
Collection Date : 03/05/04 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH (On Site)	7.9		su			
Hardness	38.	30.	mg/l	130.1	03/07/04	1
Oil & Grease	BDL	1.0	mg/l	413.1	03/11/04	1
Suspended Solids	5.6	1.0	mg/l	160.2	03/09/04	1
Copper	0.013	0.010	mg/l	200.7	03/07/04	1
Lead	BDL	0.0050	mg/l	200.7	03/07/04	1
Zinc	0.058	0.030	mg/l	200.7	03/07/04	1


Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

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REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

Date Received : March 05, 2004
Description : Storm Ponds
Sample ID : POND 002 8 IN
Collected By : Beth May
Collection Date : 03/05/04 12:42

ESC Sample # : L146673-02

Site ID : CORVETTE PLANT

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH (On Site)	8.2		su			
Hardness	47.	30.	mg/l	130.1	03/07/04	1
Oil & Grease	BDL	1.0	mg/l	413.1	03/11/04	1
Suspended Solids	5.8	1.0	mg/l	160.2	03/09/04	1
Copper	0.013	0.010	mg/l	200.7	03/07/04	1
Lead	BDL	0.0050	mg/l	200.7	03/07/04	1
Zinc	0.059	0.030	mg/l	200.7	03/07/04	1

Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
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REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

Date Received : March 05, 2004
Description : Storm Ponds
Sample ID : POND 003 11 IN
Collected By : Beth May
Collection Date : 03/05/04 13:12

ESC Sample # : L146673-03

Site ID : CORVETTE PLANT

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH (On Site)	7.7		su			
Hardness	58.	30.	mg/l	130.1	03/07/04	1
Oil & Grease	2.6	1.0	mg/l	413.1	03/11/04	1
Suspended Solids	12.	1.0	mg/l	160.2	03/09/04	1
Copper	BDL	0.010	mg/l	200.7	03/07/04	1
Lead	BDL	0.0050	mg/l	200.7	03/07/04	1
Zinc	0.096	0.030	mg/l	200.7	03/07/04	1

Linda Cashman, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

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REPORT OF ANALYSIS

March 12, 2004

Mr. Olin Desonier
General Motors, Bowling Green
600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

Date Received : March 05, 2004
Description : Storm Ponds
Sample ID : POND 004 2 IN/1 IN
Collected By : Beth May
Collection Date : 03/05/04 13:30

ESC Sample # : L146673-04

Site ID : CORVETTE PLANT

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH (On Site)	7.2		su			
Oil & Grease	BDL	1.0	mg/l	413.1	03/11/04	1
TOC (Total Organic Carbon)	2.0	1.0	mg/l	415.1	03/08/04	1
Suspended Solids	3.5	1.0	mg/l	160.2	03/10/04	1
Benzene	BDL	0.00050	mg/l	602	03/09/04	1
Toluene	BDL	0.00050	mg/l	602	03/09/04	1
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene	91.		% Rec.	602	03/09/04	1


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BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

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600 Corvette Drive, P.O. Box 90006
Bowling Green, KY 42102-9006

Quality Assurance Report Level II

L146673

March 12, 2004

Analyte	Result	Laboratory Blank		Date Analyzed	Batch
		Units			
TOC (Total Organic Carbon)	< 1	mg/l		03/08/04 13:56	WG147226
Hardness	< 30	mg/l		03/07/04 08:25	WG147420
Copper	< .01	mg/l		03/07/04 21:38	WG147424
Lead	< .005	mg/l		03/07/04 21:38	WG147424
Zinc	< .03	mg/l		03/07/04 21:38	WG147424
Suspended Solids	< 1	mg/l		03/09/04 10:07	WG147553
Benzene	< .0005	mg/l		03/09/04 06:58	WG147586
Toluene	< .005	mg/l		03/09/04 06:58	WG147586
Suspended Solids	< 1	mg/l		03/10/04 07:19	WG147628
Oil & Grease	< 1	mg/l		03/11/04 20:19	WG148046
Oil & Grease	< 1	mg/l		03/11/04 22:17	WG148051

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
TOC (Total Organic Carbon)	mg/l	484.	480.	0.809	20	L146514-01	WG147226
Hardness	mg/l	296.	240.	21.0	20	L146128-02	WG147420
Suspended Solids	mg/l	28.7	27.0	5.99	20	L146533-01	WG147553
Suspended Solids	mg/l	406.	380.	6.62	20	L146560-03	WG147553
Suspended Solids	mg/l	10.5	11.0	4.65	20	L146696-01	WG147628
Suspended Solids	mg/l	63.0	69.0	9.09	20	L146789-01	WG147628

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TOC (Total Organic Carbon)	mg/l	4	4.50	113.	85-115	WG147226
Hardness	mg/l	0	277.	0.00	85-115	WG147420
Copper	mg/l	1	0.990	99.0	85-115	WG147424
Lead	mg/l	1	0.990	99.0	85-115	WG147424
Zinc	mg/l	1	0.970	97.0	85-115	WG147424
Suspended Solids	mg/l	88.3	88.0	99.7	85-115	WG147553
Benzene	mg/l	.0292	0.0318	109.	77-122	WG147586
Toluene	mg/l	.1624	0.148	91.1	76-118	WG147586
Suspended Solids	mg/l	88.3	90.0	102.	85-115	WG147628
Oil & Grease	mg/l	60	59.0	98.3	85-115	WG148046
Oil & Grease	mg/l	60	57.0	95.0	85-115	WG148051

Analyte	Units	Laboratory Control Sample Duplicate			RPD	Limit	Ref Samp	Batch
		LCSD Res	Ref Res	Res				
TOC (Total Organic Carbon)	mg/l	4.30	4.50	4.55	20		WG147226-2	WG147226
Copper	mg/l	0.990	0.990	0.00	20		R189081-3	WG147424



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Bowling Green, KY 42102-9006

Quality Assurance Report Level II

L146673

March 12, 2004

Lead	mg/l	0.990	0.990	0.00	20	R189081-3	WG147424
------	------	-------	-------	------	----	-----------	----------

Analyte	Units	Laboratory Control Sample Duplicate				Limit	Ref Samp	Batch
		LCSD Res	Ref Res	RPD				
Zinc	mg/l	0.980	0.970	1.03	20		R189081-3	WG147424
Benzene	mg/l	0.0331	0.0318	3.91	15		R189339-3	WG147586
Toluene	mg/l	0.153	0.148	3.06	14		R189339-3	WG147586
Oil & Grease	mg/l	58.0	59.0	1.71	20		R189574-3	WG148046
Oil & Grease	mg/l	55.0	57.0	3.57	20		R189572-3	WG148051

Analyte	Units	Matrix Spike				TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res							
TOC (Total Organic Carbon)	mg/l	21.0	1.70	20			96.5	80-120	L146651-01	WG147226
Copper	mg/l	1.04	0.0130	1			102.	75-125	L146673-02	WG147424
Lead	mg/l	1.03	0.00	1			103.	75-125	L146673-02	WG147424
Zinc	mg/l	1.06	0.0590	1			101.	75-125	L146673-02	WG147424
Benzene	mg/l	0.0317	0.00	0.0292	108.		71-123		L146419-06	WG147586
Toluene	mg/l	0.145	0.00	0.1624	89.5		67-123		L146419-06	WG147586

Analyte	Units	Matrix Spike Duplicate				RPD	Limit	%Rec	Ref Samp	Batch
		MSD Res	Ref Res							
TOC (Total Organic Carbon)	mg/l	21.0	21.0			0.00	20	96.5	L146651-01	WG147226
Copper	mg/l	1.03	1.04			0.776	20	101.	L146673-02	WG147424
Lead	mg/l	1.02	1.03			1.17	20	102.	L146673-02	WG147424
Zinc	mg/l	1.05	1.06			1.04	20	99.4	L146673-02	WG147424
Benzene	mg/l	0.0324	0.0317			2.37	15	111.	L146419-06	WG147586
Toluene	mg/l	0.155	0.145			6.65	14	95.6	L146419-06	WG147586

Batch number /Run number / Sample number cross reference

WG147420: R189063: L146673-01 02 03
WG147424: R189081: L146673-01 02 03
WG147226: R189222: L146673-04
WG147553: R189238: L146673-01 02 03
WG147628: R189316: L146673-04
WG147586: R189339: L146673-04
WG148051: R189572: L146673-04
WG148046: R189574: L146673-01 02 03

* See Attachment B of standard report for list of qualifiers.
* Calculations are performed prior to rounding of reported values .



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Quality Assurance Report
Level II

L146673

March 12, 2004

ESC Level 2 Data Package

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.